

I CLAIM:

1. A roller mill, comprising:

a base;

a pulverizing table having a substantially horizontal upper surface, supported against said base and arranged to be rotated around a vertical axis intersecting the upper surface in a center point thereof;

an annular groove, formed on the upper surface of said pulverizing table, adjacent to an outer periphery of said table;

at least one roller shaft mounted pivotably on said base in proximity to said table, at an angle α with respect to horizontal direction, toward the center point and having an end portion located above said table;

a pulverizing roller supported rotatably against the end portion of said at least one roller shaft; and

means for pressing said pulverizing roller toward said annular groove, wherein raw material introduced to said rotatable pulverizing table is pulverized by compression between said annular groove and said at least one pulverizing roller,

wherein an outer peripheral surface of said pulverizing roller has a smooth, generally arcuate cross section with at least one substantially flat section in the central portion thereof.

2. A roller mill according to claim 1, wherein the width of the substantially flat section is between about 20 % and about 60 % of the axial width of said roller.

3. A roller mill according to claim 2, wherein the width of the substantially flat section is between about 25 % and about 40 % of the axial width of said roller.

4. A roller mill according to claim 1, wherein the substantially flat section extends for a distance W_1 from a central plane perpendicular to an axis of said roller toward the center of the pulverizing plate, and for a distance W_2 from the central plane perpendicular to the axis of said roller toward an outer edge of the pulverizing plate, whereby W_1 is larger than W_2 .

5. A roller mill according to claim 1, wherein the substantially flat section is slanted from the direction of the roller axis at an angle of between 0° and α toward the horizontal direction.

6. A roller mill according to claim 5, wherein the substantially flat section is slanted from the direction of the roller axis at an angle of between about 2° and about 6° toward the horizontal direction.

7. A roller mill according to claim 1, wherein a cross section of the outer peripheral surface of said roller comprises a first tangential section between the flat section and an inner axial face of said roller and a second tangential section between the flat section and an outer axial face of said roller.

8. A roller mill according to claim 7, wherein the first tangential section forms an angle of between about 30° and about 50° with the inner axial face and the second tangential section forms an angle of between about 30° and about 50° with the outer axial face.
9. A roller mill according to claim 1, wherein said groove has an arcuate cross-sectional profile.
10. A roller mill according to claim 9, wherein the cross-sectional profile of said groove has a first radius of curvature in a radially inner portion of said groove and a second radius of curvature in a radially outer portion of said groove, whereby the first radius of curvature is smaller than the second radius of curvature.
11. A roller mill according to claim 1, wherein said at least one pulverizing roller and said groove form a gap having a cross-sectional shape with a minimum height in a radially inner portion of said groove.
12. A roller mill according to claim 11, wherein the cross-sectional shape of the gap has a local minimum in the radially outer portion of said groove.